

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claims 1-5, 11-13 and 19-21 without prejudice or disclaimer and AMEND claims 6, 14, 18, 22-25, 27 and 28 in accordance with the following:

1 - 5 (cancelled)

6. (currently amended) A seek direction detecting apparatus comprising:

a photodetector having first, second, third and fourth light receiving regions arranged in a direction corresponding to a radial direction of a recording medium to independently perform photoelectric conversion with respect to incident light reflected/diffracted by the recording medium and to output first, second, third and fourth detection signals, respectively; and  
a signal processor comprising:

a first subtractor which subtracts a sum of the first and fourth detection signals and a sum of the second and third detection signals, to generate a first error signal,

a second subtractor which subtracts a sum of the first and second detection signals and a sum of the third and fourth detection signals to generate a second error signal,  
and

a comparator which compares the first error signal and the second error signal to generate a seek direction detection signal.

7. (original) The apparatus as claimed in claim 6, wherein:

the first through fourth light receiving regions of the photodetector are each divided in a direction corresponding to a tangential direction of the recording medium to form eight light receiving regions; and

the eight light receiving regions are used to detect information signals recorded on the recording medium.

8. (original) The apparatus as claimed in claim 6, wherein the recording medium is a DVD-RAM disc or a land/groove type next generation DVD-RAM disc.

9. **(original)** A method of detecting a seek direction on a recording medium, the method comprising:

irradiating light including a predetermined amount of defocus on the recording medium;  
dividing the light reflected/diffracted by the recording medium into first, second, third and fourth light regions corresponding to a radial direction of the recording medium;  
generating first, second, third and fourth detection signals corresponding to the first, second, third and fourth light regions, respectively;  
subtracting a sum of the first and fourth detection signals and a sum of the second and third detection signals, to generate a first error signal;  
subtracting a sum of the first and second detection signals and a sum of the third and fourth detection signals, to generate a second error signal; and  
comparing the first error signal and the second error signal, to generate the seek direction error signal.

10. **(original)** The method as claimed in claim 9, wherein the recording medium is a DVD-RAM disc or a land/groove type next generation DVD-RAM disc.

11 -13 **(cancelled)**

14. **(currently amended)** ~~The method of claim 13, further comprising:~~ A method of generating error signals for controlling optical recording/reproduction from an optical disc, the method comprising:

generating first, second, third and fourth detection signals, the first and second detection signals corresponding respectively to light reflected/refracted from radially inward and radially outward portions of a light spot formed on the optical disc, and the third and fourth detection signals corresponding to light reflected/refracted from first and second central portions of the light spot;

subtracting a sum of the first and second detection signals and a sum of the third and fourth detection signals to generate a defocus error signal;

subtracting a sum of the first and third detection signals and a sum of the second and fourth detection signals to generate a push-pull tracking error signal; and

comparing the defocus error signal and the push-pull tracking error signal to generate a seek direction error signal.

15. **(original)** The method of claim 14, wherein the comparing comprises:

binarizing the defocus error signal with respect to a predetermined DC value;

binarizing the push-pull tracking error signal; and  
comparing the binarized defocus error signal and the binarized push-pull tracking error signal to generate the seek direction error signal.

16. **(original)** The method of claim 14 further comprising:

AC coupling the defocus error signal prior to the binarizing of the defocus error signal.

17. **(original)** A method of determining whether a light spot is formed on a land or a groove of an optical disc, the method comprising:

defocusing the light spot by a predetermined amount;

generating first, second, third and fourth detection signals, the first and second detection signals corresponding respectively to light reflected/refracted from radially inward and radially outward portions of the light spot formed on the optical disc, and the third and fourth detection signals corresponding to light reflected/refracted from first and second central portions of the light spot;

subtracting a sum of the first and second detection signals and a sum of the third and fourth detection signals to output a subtraction result;

determining that the light spot is formed on a land of the optical disc if the subtraction result is greater than a predetermined value; and

determining that the light spot is formed on a groove of the optical disc if the subtraction result is less than a predetermined value.

18. **(currently amended)** A method of generating error signals for controlling optical recording/reproduction from an optical disc, the method comprising:

generating first, second, third and fourth detection signals, the first and second detection signals corresponding respectively to light reflected/refracted from radially inward and radially outward portions of a light spot formed on the optical disc, and the third and fourth detection signals corresponding to light reflected/refracted from ~~first and second~~ radially inward and radially outward central portions of the light spot, respectively; and

subtracting a sum of the first and third detection signals and a sum of the second and fourth detection signals to generate a push-pull tracking error signal.

19 - 21 **(cancelled)**

22. **(currently amended)** ~~The~~ An apparatus of claim 21, further for detecting error signals for recording to or reproducing from an optical recording medium, the apparatus comprising:

a photodetector which generates a plurality of detection signals, wherein first and second of said plurality of detection signals correspond to light reflected/refracted from radially inward and radially outward portions, respectively, of a light spot formed on the recording medium and third and fourth detection signals corresponding to light reflected/refracted from radially inward and radially outward portions, respectively, of a central portion of the light spot;

a first subtractor which subtracts a sum of the first and second detection signals and a sum of the third and fourth detection signals to output a first error signal;

a second subtractor which subtracts a sum of the first and third detection signals and a sum of the second and fourth detection signals to generate a second error signal; and

a comparator which compares the first and second error signals to generate a seek direction error signal.

23. **(currently amended)** The apparatus of claim 19, ~~wherein~~ 22, wherein the optical recording medium comprises a DVD-RAM disc having a track pitch of about 0.615  $\mu\text{m}$ .

24. **(currently amended)** The apparatus of claim 19, ~~wherein~~ 22, wherein the optical recording medium comprises a DVD-RAM disc having a track pitch of about 0.34  $\mu\text{m}$ .

25. **(currently amended)** The apparatus of claim 19, ~~wherein~~ 22, wherein the optical recording medium comprises a land/groove structure having a track pitch of not more than 0.3  $\mu\text{m}$ .

26. **(original)** The apparatus of claim 25, wherein where the light spot is formed on a land, a slope of a plot of the first error signal according to an amount of defocus is positive.

27. **(currently amended)** The apparatus of claim 25, wherein where the light spot is formed on a groove, a slope of a plot of the ~~defocus~~ first error signal according to an amount of defocus is negative.

28. **(currently amended)** The apparatus of claim 25, wherein where the light spot is formed on a land, a slope of a plot of the first error signal according to recording medium thickness is negative.

29. **(original)** The apparatus of claim 25, wherein where the light spot is formed on a land, a slope of a plot of the first error signal according to recording medium thickness is positive.